AI Ethics –
Why AI Safety matters

Dr. Bettina Laugwitz, Global Lead of AI Ethics, SAP
SESS10N, October 16, 2024

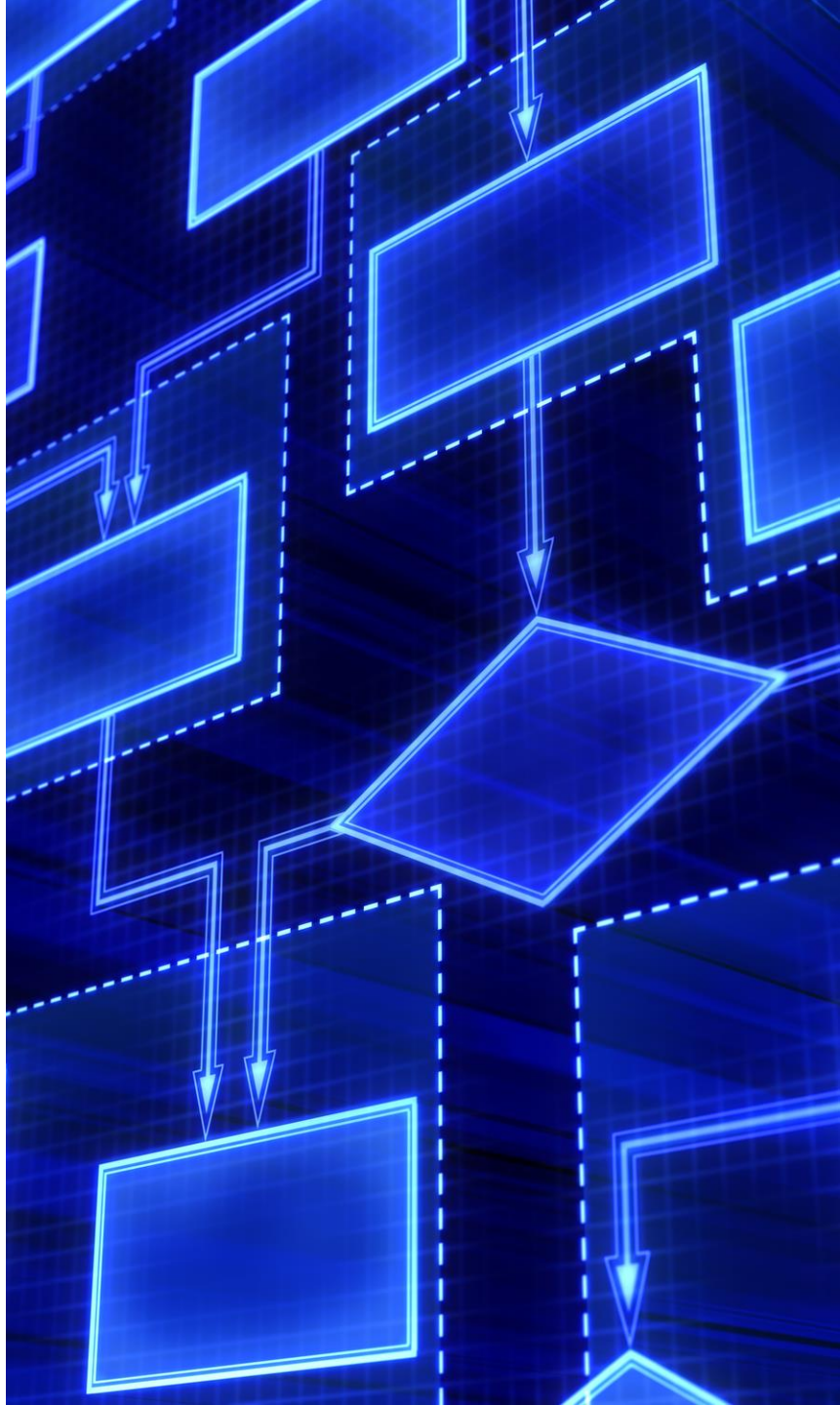
Carl Benz, Berta Benz, Benz Patent-Motorwagen; source: Wikimedia Commons.

Learning machines

Artificial intelligence and machine learning

Artificial Intelligence (AI) equips machines with human-like capabilities

- Includes **symbolic AI** based on defined rules and stable algorithms



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Machine Learning (ML)
systems to learn and improve from experience or data

- **Deep Learning** uses multi-layered neural networks to analyze complex data patterns from available data.

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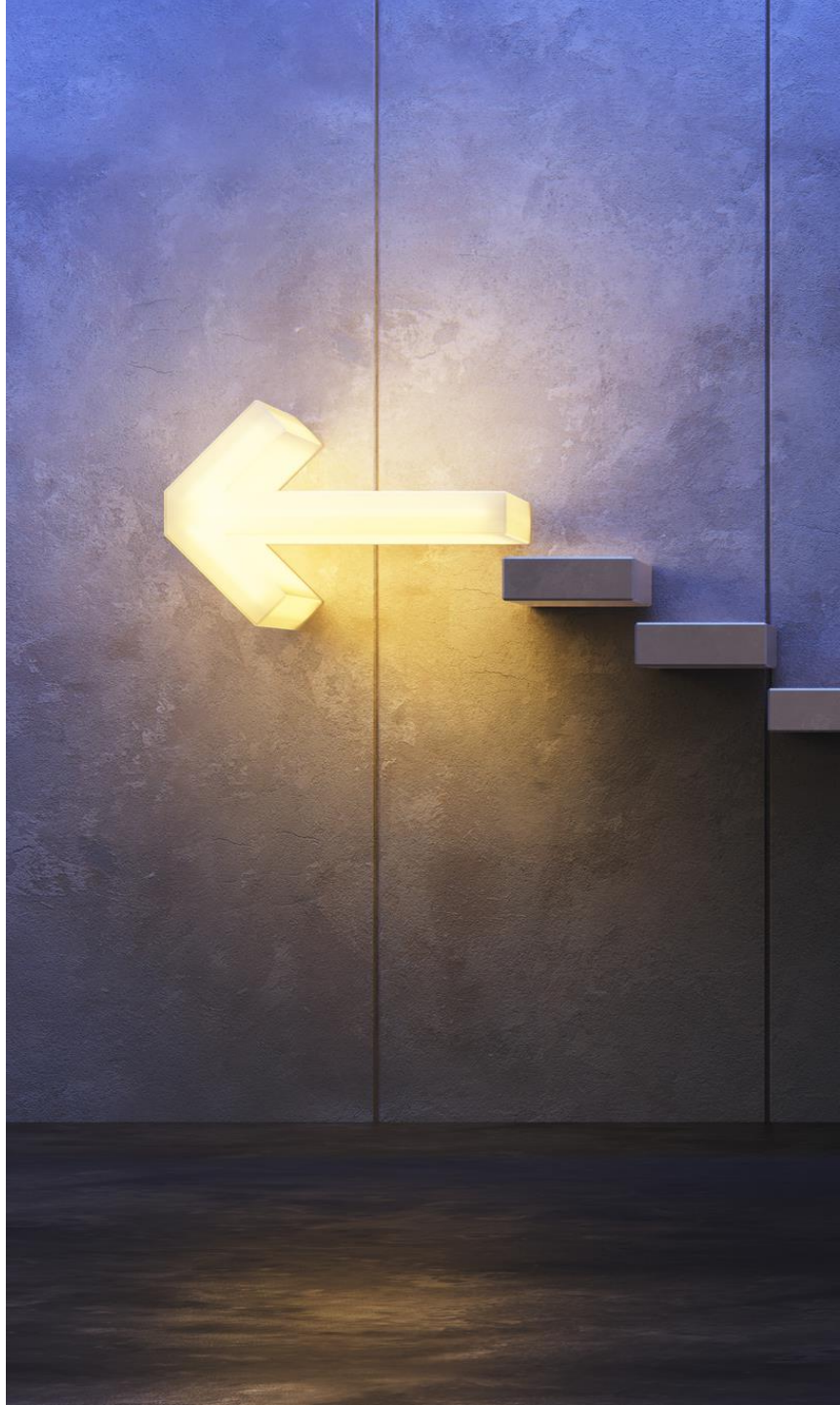
Generative AI (GenAI) utilizes foundation models to create new content, based on the data they were trained on.

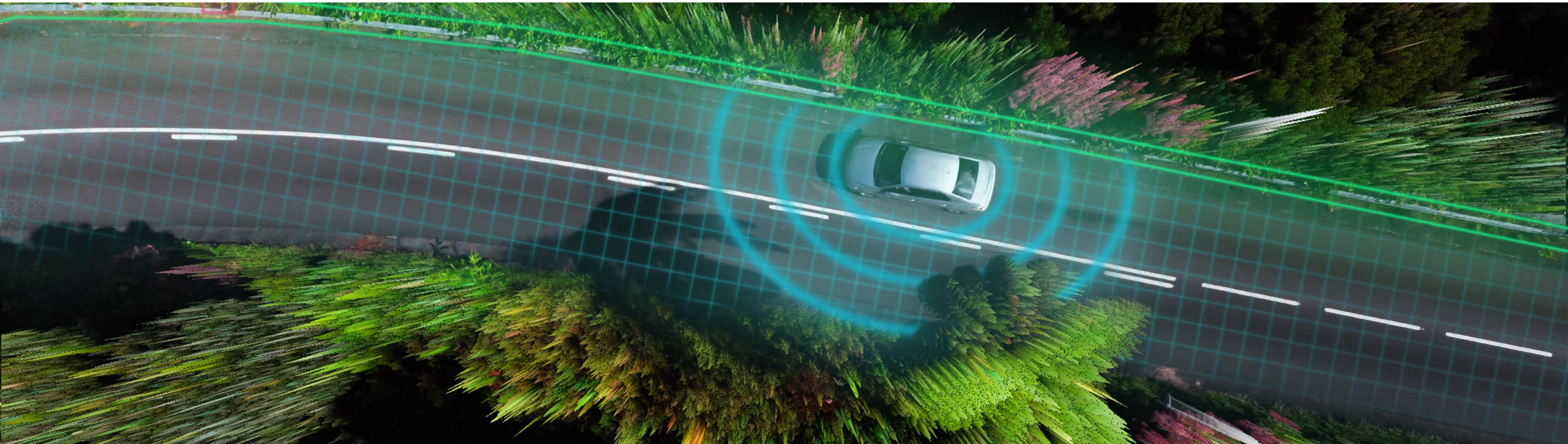
- **Large language models (LLMs)** for text and computer code.

AI Safety – Takeaways

#1 Understand machine learning.



Managing expectations

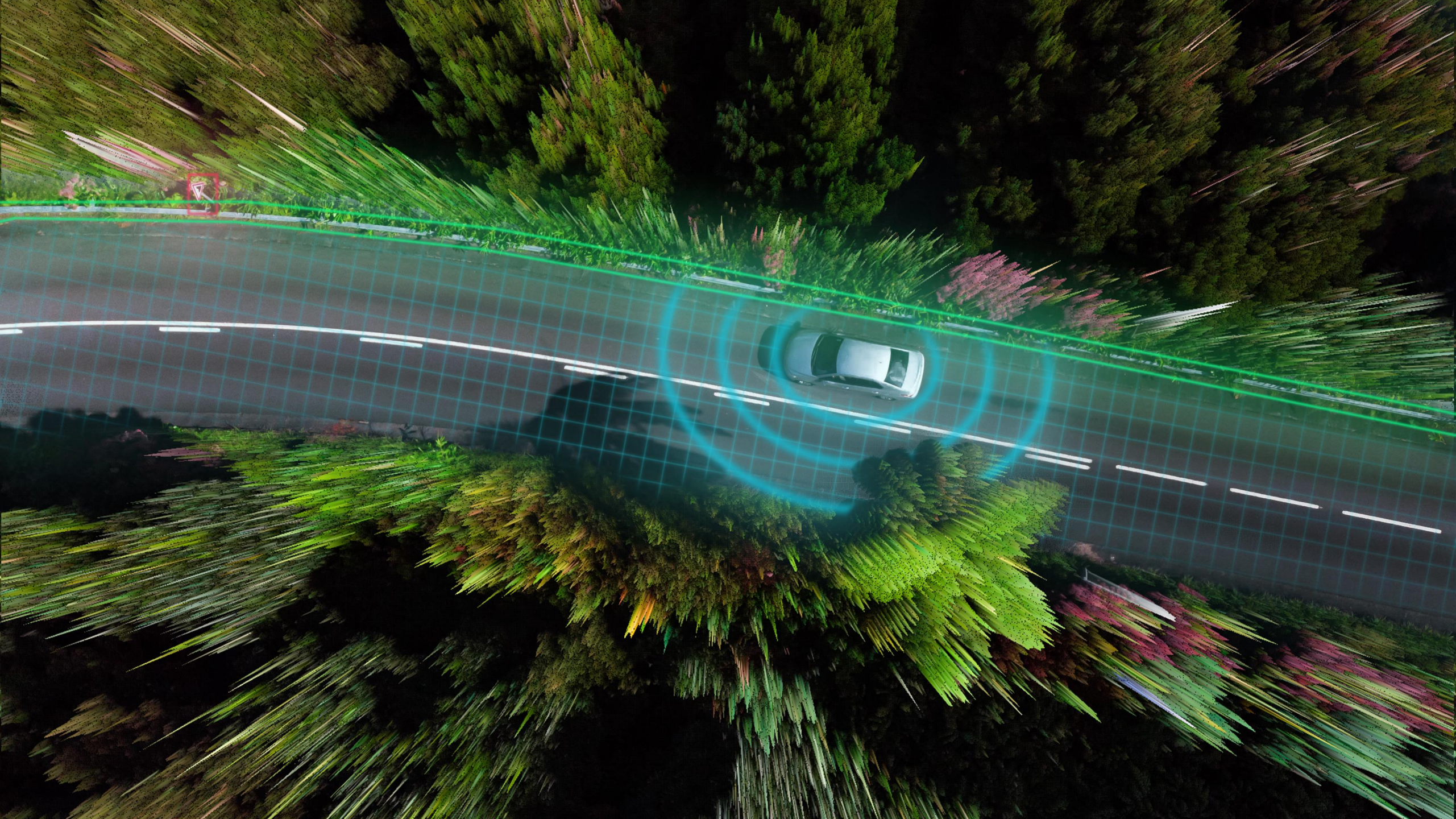


*Source: https://aiverifyfoundation.sg/downloads/Discussion_Paper.pdf

Images generated from text using Adobe Firefly. Prompt: *“photo of a dozen of raw eggs that just fell from 1 meter height onto a stone kitchen floor”*

Machine automation – human control

TV On Demand
Athletics
Cycling
Swimming
Rowing
12
Sport
Cooking 21
Travel 17
Culture 25
Family 31
Music 15



CONTRACT

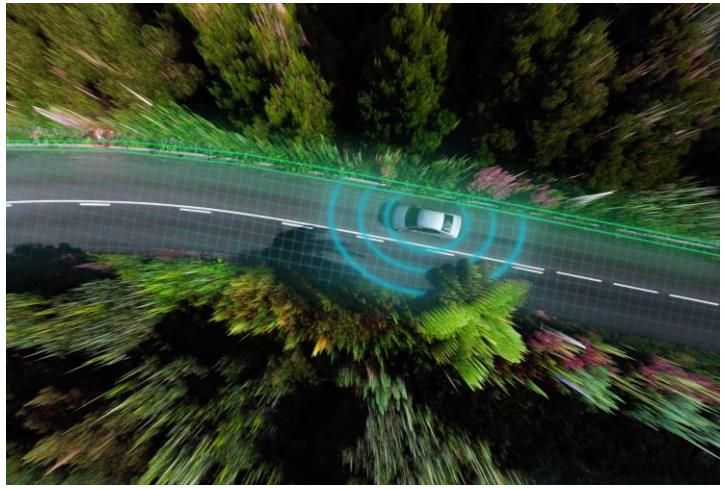
Machine automation – human control

Recommender Systems

Automation +++
Control (o)

Consequential Applications

Automation +
Control **+++** *(end-user)*



Live-critical systems

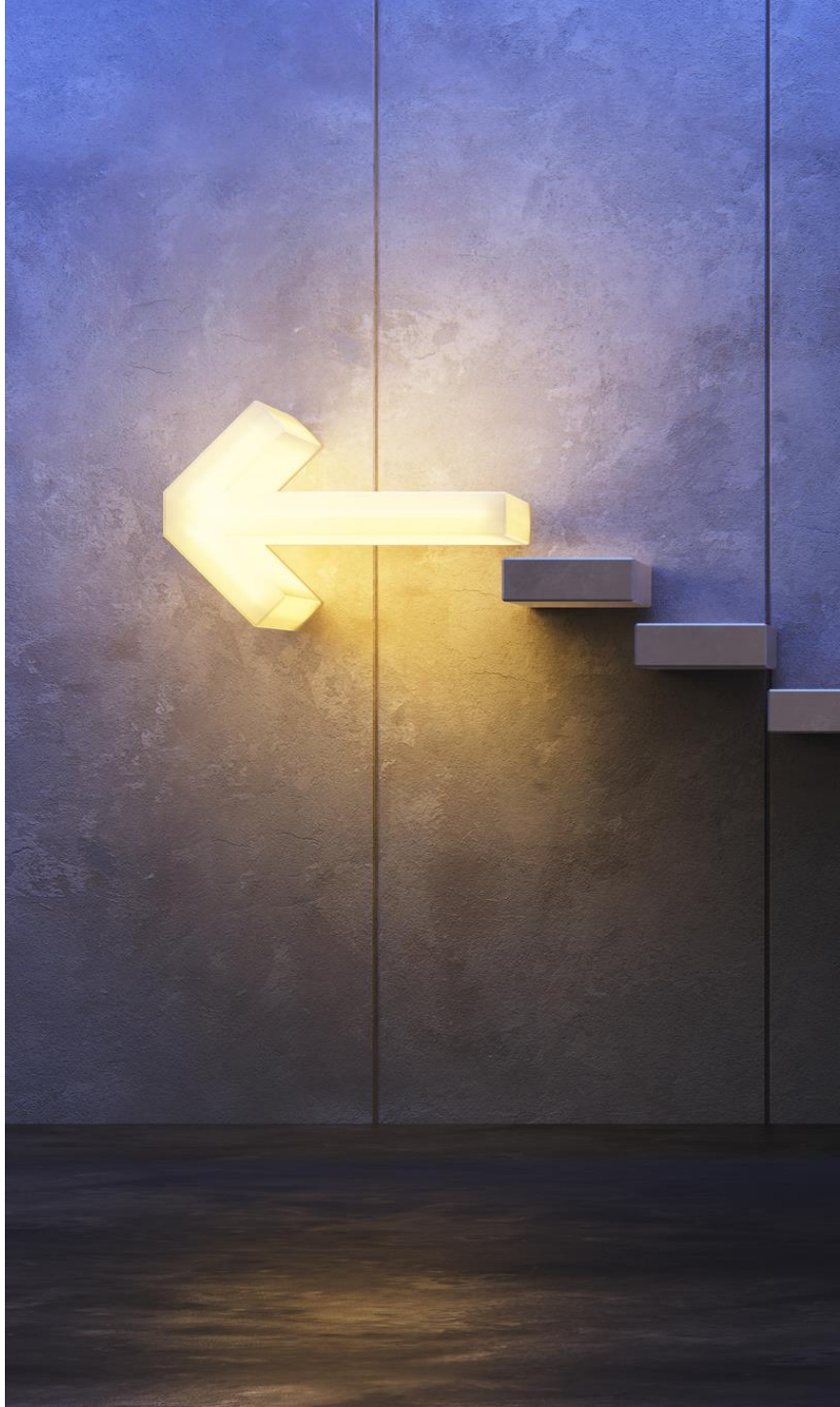
Automation +++
Control **+++** *(developer)*

Ben Schneiderman: Human-Centered Artificial Intelligence (https://arxiv.org/pdf/2002.04087)

AI Safety - Takeaways

#1 Understand machine learning.

#2 Trust and verify.



Balancing risks and benefits

Get ready to participate in road traffic responsibly

State-of-the-art **(technical) robustness**

Applicable **laws and regulation**

Ethical principles and values

Get ready to develop and use AI / ML responsibly

State-of-the-art **(technical) robustness**

- to avoid technical failures

Applicable **laws and regulation**

- to avoid legal challenges

Ethical principles and values

- to identify sustainable innovation opportunities

Requirements for trustworthy AI

1 Human agency and oversight

2 Technical robustness and safety

3 Privacy and data governance

4 Transparency

5 Diversity, non-discrimination and fairness

6 Societal and environmental wellbeing

7 Accountability

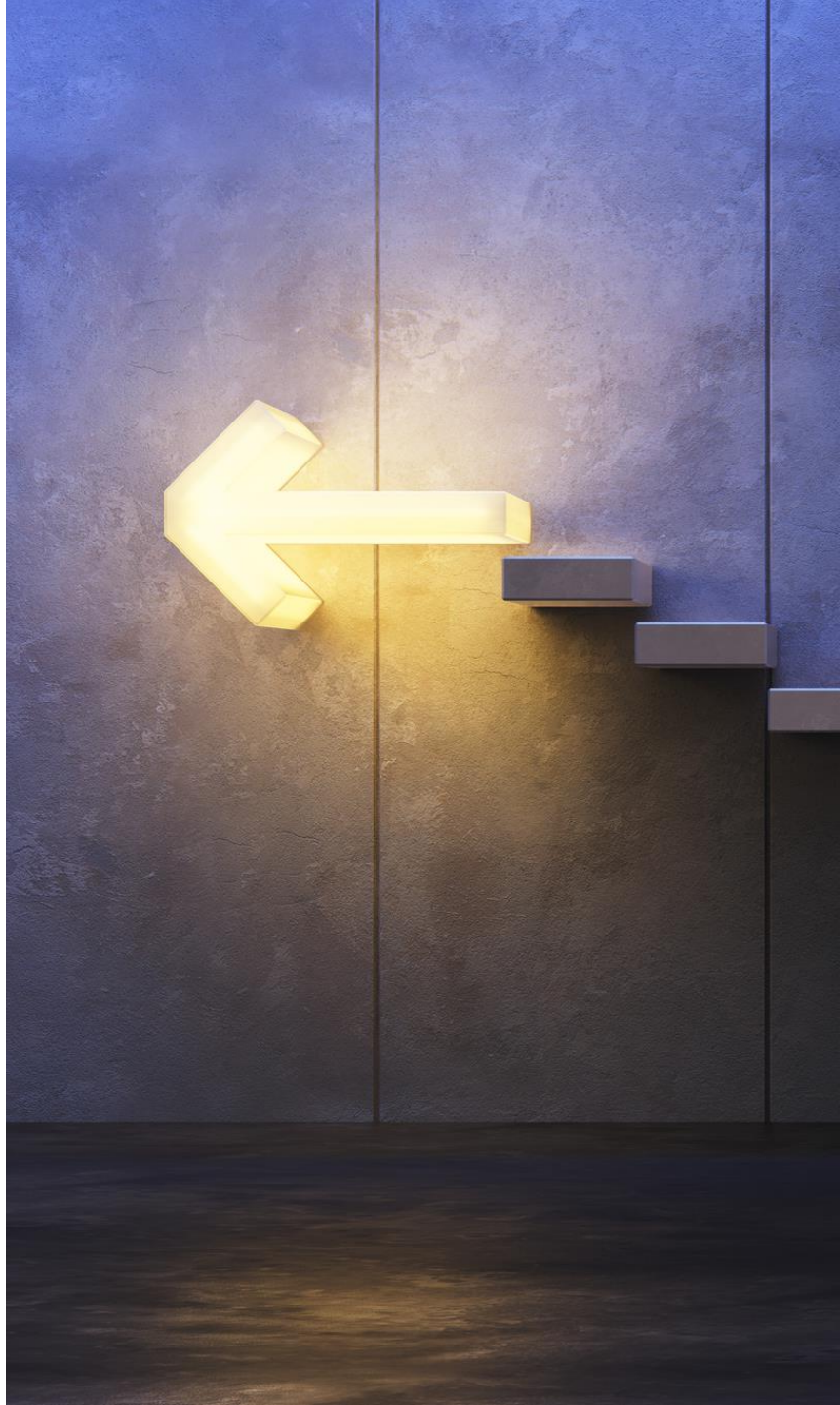
https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai

AI Safety - Takeaways

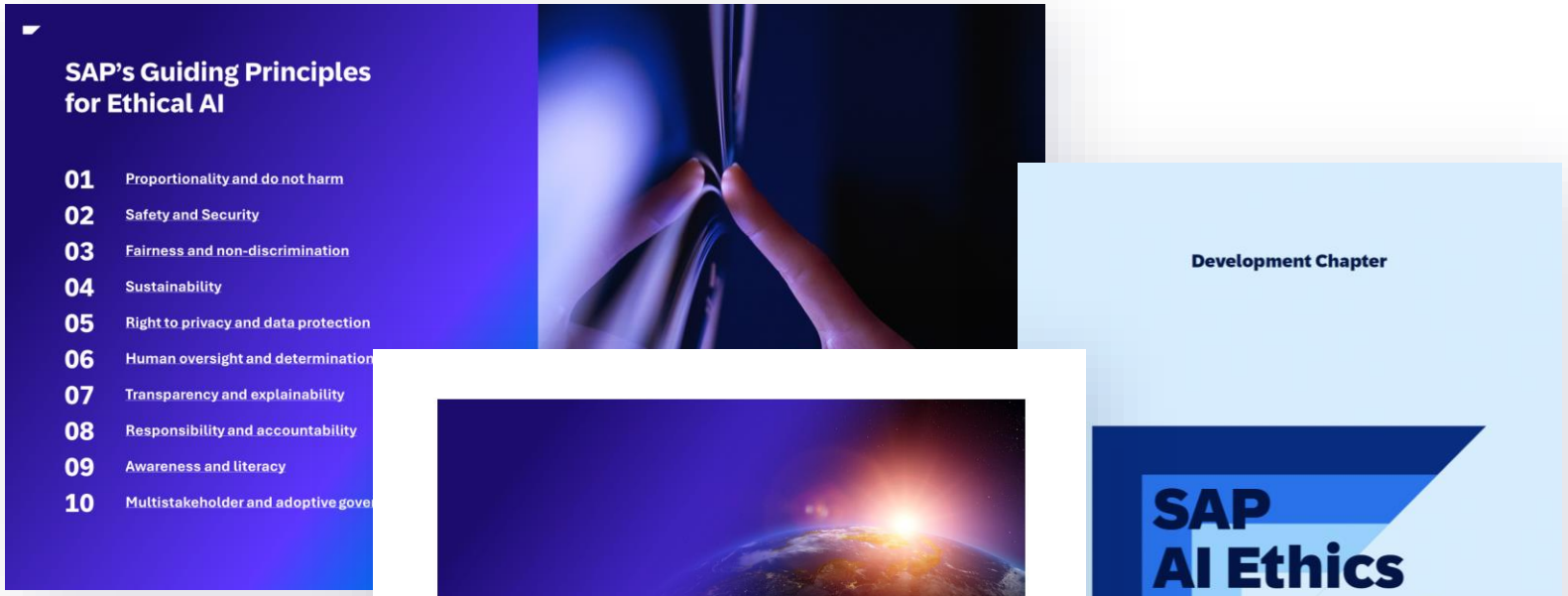
#1 Understand machine learning.

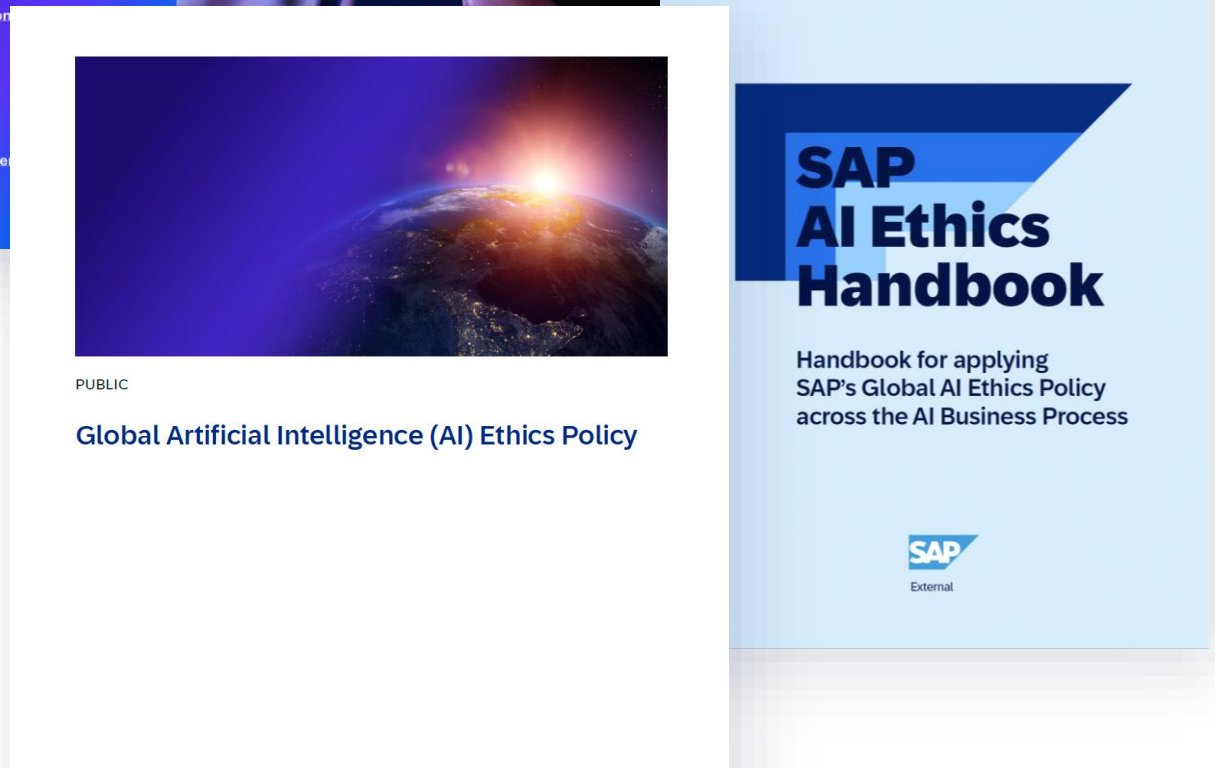
#2 Trust and verify.

#3 Stay attentive – but don’t panic.



AI ethics and responsible AI at SAP





https://www.sap.com/products/artificial-intelligence/ai-ethics.html

Thank you!

Contact information:

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SAP Learning course “Putting AI ethics into practice at SAP”

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